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Key Points

- ◆ In the aftermath of the North Atlantic Treaty Organization (NATO) summit in Wales in September 2014, the Obama administration pledged \$1 billion to assist Allies on the eastern front. This was in response to Russian initiatives and our Allies' requests for increased U.S. presence.
- ◆ A potential response could be the introduction of intelligence, surveillance, and reconnaissance capabilities around the Black Sea.
- ◆ Given the increasing concern over the strategic importance and therefore vulnerability of the areas bordering the Black Sea, such as Odessa, Transnistria, and the Danube Delta, this asymmetric response from the United States not only would add a less escalatory pressure on Russian interests in the area but also could alleviate some of the concerns of some NATO members.

Responding to Russia after the NATO Summit: Unmanned Aerial Systems Overmatch in the Black Sea

by Conor Sullivan, Schuyler Standley, and James M. Keagle

The Ukraine conflict poses unique and asymmetric challenges to the international community. Since the earliest days of the Crimean crisis, Russian support of “separatists” within Ukraine has ranged from plainclothes thugs to more traditional uniformed troops, munitions, and other forms of aid. Some of the individuals involved may have had links to the Russian military or its intelligence community. While much of the aid comes through the porous border between Russia and Ukraine, Russia also leverages the opportunity to use Black Sea smugglers as a way to supply ongoing rebellions or to initiate new revolts. Two Black Sea–bordering regions, Odessa and Transnistria, are home to active pro-Russian movements that could potentially evolve into a pro-Russian state. Worries of Russia supplying separatists via illicit movements on the Black Sea and generally advancing its *Novorossiya* claims should be matched to a general concern over Black Sea smuggling rings, which traffic humans, weapons, and nuclear materials into Europe via Odessa’s port.

To solve these problems, American unmanned aircraft systems (UAS) offer an effective intelligence, surveillance, and reconnaissance (ISR) solution. Assets could conduct maritime ISR of the Crimean Peninsula, Russian borders, main smuggling corridors, and littoral regions over international waters. Based on the ISR accumulation, such assets could provide intelligence on Russia-based aggression while aiding Black Sea Allies to apprehend criminals. Assets such as the RQ-4 Global Hawk or MQ-4C Triton systems would fit this mission profile and could operate out of the existing U.S. airbase at Romania’s Mihail Kogălniceanu International Airport (M.K. Base) for maximum persistence across the Black

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Sea. Given the increasing concern over the strategic importance—and therefore vulnerability—of the areas bordering the Black Sea, such as Odessa, Transnistria, and the Danube Delta, this asymmetric response from the United States not only would add a less-escalatory pressure on Russian interests in the area but also could alleviate some the concerns of North Atlantic Treaty Organization (NATO) members in the area.

Background

Prior to 2014, few people assumed the Black Sea region would be of international consequence in the near future, despite growing evidence of a Russian presence (see figure 1). However, the Black Sea has emerged as a serious fault line between the East and West. Months after Ukraine's Maidan protests in November–December 2013 demonstrated the strength of pro-Europe grassroots

movements, Russian-backed separatists and psychological operations (PSYOPs) overshadowed Ukraine's success against corruption and oligarchy. Now, with dim prospects for the February 15, 2015, Minsk accords after the rebel victory over the strategically essential city of Debaltseve, claims of direct Russian military support to rebels seem to grow daily in parallel to successes on the battlefield (see figure 2).¹

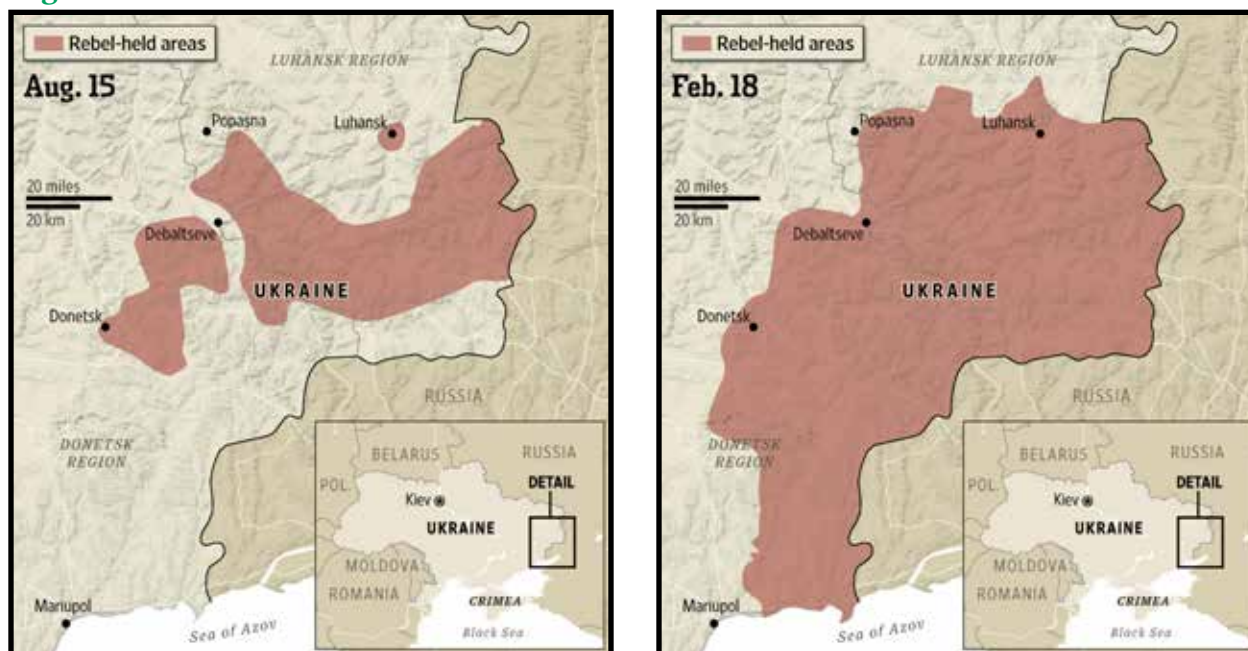
In response to the crisis, the West subjected the Russian economy to multiple rounds of sanctions. However, although the European Union still resists implementing the most punishing steps due to concerns over energy security and Russian retaliation, the progressively obvious ineffectiveness of the Minsk accords has increased its support for stronger sanctions.²

Meanwhile, a more passive-aggressive Russian propaganda policy superficially subsumed Russian President

Figure 1. Russian Forces in the Greater Black Sea Region



Figure 2. Growth of Rebel-Held Areas



Vladimir Putin's candid support of reclaiming historic Novorossiya. His propaganda campaign largely focuses on Poland, the Baltic States, and Romania, bringing into question whether NATO Article V guarantees are hollow in the face of Russian aggression. Even more issues emerged following the downing of Malaysian Airlines Flight 17 over Ukraine in July 2014, and cross-border artillery renewed questions of direct Russian engagement in the crisis.

The rapidly evolving events in the Black Sea region could be interpreted as pointing toward either a period of peaceful unease in Eastern Europe or one of expanding proxy conflicts. For the sake of its Allies and their interests, the United States and NATO should not optimistically hedge their positions in the Black Sea but instead strengthen their deterrence through enhanced preparation for contingency operations.

Perhaps the most likely outcome of pro-occidental maneuvering by Eastern Europe is the risk of further Russian territorial encroachment and/or PSYOPs in various "frozen conflicts." These conflicts result from "the combination of a weak state and aggressive local elites" that eventually leads to an ethnic security dilemma based on mutual mistrust.⁴ One example is in Transnistria, a region

bordering Moldova and Ukraine, which previously sought to join the Russian Federation in 1990 through open warfare. Cossacks from Ukraine and Russia operated and supplied the rebellion with some success; Transnistria remains a semi-autonomous state within Moldova. Soon after the Crimea referendum in March 2014, the Transnistrian government again asked for accession into Russia. With over 1,200 Russian soldiers currently stationed in the state, popular opinion heavily in favor of unification with Russia, and the possibility of arms and agitators being smuggled into Transnistria through Odessa or the Black Sea, another armed rebellion could easily be fomented.⁵

Another possible area of conflict lies in Odessa, the fourth largest city in Ukraine with around 20 percent of the population consisting of ethnic Russians according to the latest census in 2001.⁶ The port city remains economically and militarily vital for Ukraine and is a center for criminal smuggling across the Black Sea. Despite Odessa's proximity to Crimea and Transnistria, its location on the Black Sea, and its ethnic ties to Russia, the area has been relatively calm. On May 2, 2014, however, an altercation unfolded involving pro-Ukrainian and pro-Russian mobs, some of which were from Transnistria. By the end of the street clashes, several government

buildings had been burned down and 48 people were dead. The relative peace in Odessa does not preclude the future possibility of a Russian state security or intelligence operation (perhaps by the Federal Security Service or Main Intelligence Directorate) to smuggle Russian special forces and weaponry into the city. Any pro-Russian sympathy in Odessa may be all the justification Putin needs to put his stamp of approval on a spontaneous populist “revolution.” Considering Odessa’s close ties with organized crime and Ukraine’s already hard-pressed military, such an operation remains feasible.

Regardless of whether historical conflicts in the Black Sea devolve into open rebellions, international dependence on oil and gas pipelines that run through the Black Sea emphasize the importance of securing an internationally strategic energy hub. Pipelines pass through Turkey, Georgia, Ukraine, and Bulgaria and will transit the Black Sea itself if the South Stream pipeline project is ever completed. Homes as far away as France use the gas from these pipelines, which are vital to the global economy. Likewise, the Black Sea sees tanker traffic daily among its littoral states and through the Bosphorus. Guaranteeing that these essential energy routes remain open and secured from Russian pseudo-separatist, terrorist, or criminal actions should be a top priority for the United States and its Allies in the region.

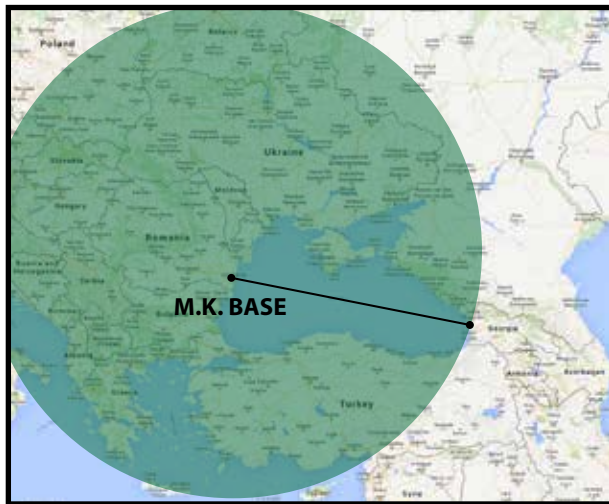
The conflict in Crimea also presents organized crime groups in Eastern Europe with a prime opportunity to expand throughout the Black Sea region. After the collapse of Soviet authority in the area, all that remained for the Black Sea states was a “legacy of a lack of respect for the rule of law, absence of civil society, a large criminal underworld and shadow economy, endemic corruption and a demoralized law enforcement and legal apparatus.”⁷ Drug and weapons smuggling, human-trafficking, and even nuclear arms and materials trafficking have all taken place through the Black Sea corridor. The separatist-controlled areas around Donetsk and Luhansk provide organized crime an easy border crossing from Russia into Ukraine. Putin’s strategy may be to either connect these geographically disconnected areas or to leave them separated following a Kaliningrad model.⁸

These two ongoing crises are more closely linked than one might suspect. Both former Ukrainian President Viktor Yanukovich and Putin hold some connection to organized crime—affiliated oligarchs, albeit to varying degrees of certainty.⁹ Likewise, reports surfaced that a significant portion of the foot soldiers and “regional commanders” in the People’s Republic of Donetsk are actually mid-level mafiosos securing direct control over land long controlled by the criminal underworld.¹⁰ Perhaps unsurprisingly, Donetsk, Odessa, and Crimea represent historic areas of mafia control with large populations of native Russian speakers, and they became centers of rebel sentiment in Ukraine.

Policy

While Putin still holds ambitions to match German or U.S. soft power in Eastern Europe through the Collective Security Treaty Organization or Eurasian Union, potential conflict zones, energy interests, and trade concerns in the Black Sea must remain at the forefront of Western foreign policy concerns and garner the application of the most appropriate instrument of power. The dual threat of Russian-manipulated organized crime and separatist rebellions in a global trade and energy hub creates an asymmetric nexus of threats to global security on the Black Sea. Washington must emerge from its current policy of heavy reliance on economic sanctions as a deterrent. Instead, the United States should implement a policy of extended deterrence on the Black Sea by using UAS to promote security in the region and to provide palpable action that assures U.S. Allies of Article V commitments. Neither former NATO Secretary General Anders Fogh Rasmussen’s guarantees to Estonia that “you may be on NATO’s border geographically, but you are right at the core of our alliance politically,”¹¹ nor President Barack Obama’s statement that “in the 21st century, the borders of Europe cannot be redrawn with force”¹² is sufficient. More action by both the United States and NATO will be necessary.

Creating this climate of extended deterrence in the Black Sea is achievable using modern U.S. military technology. The United States should deploy UAS to deter both organized crime in the Black Sea and Russian ag-

Figure 3. M.K. Base Ranges

gression in the guise of popular uprisings. This would require a contingent of American ISR UAS deployed to the region with partnerships of U.S.-aligned or allied regional coast guard and police forces.

Focusing specifically on American UAS assets for ISR, law enforcement, and homeland defense appears less threatening than other offensive military capabilities. It also improves the legality, given the lack of Montreux Convention regulations on aircraft entering and operating in the Black Sea. The convention regulates which ships may pass through the Bosphorus. The most pertinent of these regulations prohibits non-Black Sea countries from sailing individual ships weighing over 15,000 tons into the sea, having single warships linger for longer than 21 consecutive days, and carrying guns larger than 8 inches. It also requires a 15-day notice to Turkey before any ships can pass through the Bosphorus.¹³ Finally, non-Black Sea powers' ships must maintain a limit of 45,000 tons of aggregate displacement in the sea for all ships. While several U.S. ships have entered the Black Sea since the start of the Ukrainian conflict, all were small-displacement vessels that exited the area after their 21-day tour expired.¹⁴

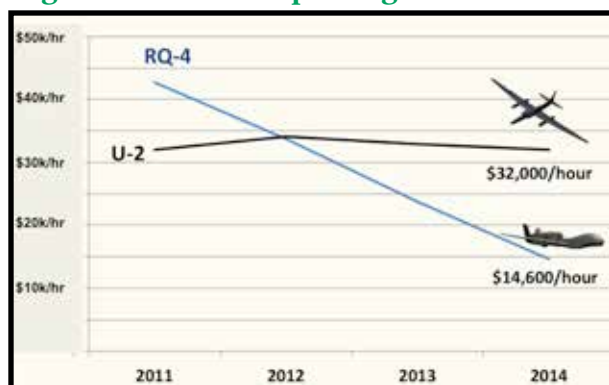
These requirements effectively preclude a large-scale, ship-based security operation. Hypothetically, if the U.S. Navy decided to stage an operation despite the 45,000-ton limits, then 5,000- to 9,000-ton *Arleigh Burke*-class destroyers could enter the Black Sea and patrol the 168,496-square-mile area for a maximum of 21 days. As-

suming a ship cruised at a high average of 30 miles per hour for the entire deployment, it would cover 15,120 miles, a mere fraction of the total sea. In addition to the impracticality of constantly cycling several destroyers or frigates to patrol the Black Sea, such rotations and U.S. presence would surely draw a severely caustic response from Russia, no matter the stated mission.

UAS may also be a more viable option than deployment of physical ships to the Black Sea due to the presence of M.K. Base (see figure 3). The base, located within 20 miles of the Black Sea, is a key location in the Northern Distribution Network to Afghanistan. In 2009, the U.S. military declared the base a permanent forward operating site. The infrastructure exists to place a cadre of UAS at this base, and the Romanian government would permit it.¹⁵ Potential UAS deployments at other U.S. airbases around the Black Sea could also be beneficial, offering longer loiter times and thus more persistent ISR coverage of the region. UAS also have an advantage over ships in terms of range of view, loiter time on station, and cost of deployment.

President Obama's June 3, 2014, request for \$1 billion could make this aforementioned deployment of American UAS possible. The money was tasked to assure NATO Allies in Eastern Europe of continued U.S. support for their security. Much of this money has been, or will be, spent on reinforcing U.S. garrisons in Poland, Estonia, and Latvia and conducting military exercises with Eastern European countries. Many Eastern European NATO members, however, want a permanent U.S. base within the region. Assuring Allies such as Romania and Bulgaria of continued NATO engagement in their security situations remains vital to sustained belief in Article V commitments for all member countries. Using the money to deploy UAS assets and expand M.K. Base would be an investment in regional stability now and into the future. As the Black Sea stands at a natural nexus for NATO-Russian soft-power conflict, natural gas trade, and radical Islam, a well-established U.S. presence in the region would give legitimacy to any subsequent stability-minded operations. Additionally, saving fuel costs by basing UAS

Figure 4. UAS Costs per Flight Hour



Source: Air Force Total Ownership Cost Database, FYs 2011–2014

out of M.K. Base allows for greater efficiency over the lifespan of the operation.

UAS Options

The RQ-4 Global Hawk system would fit the proposed Black Sea anti-smuggling operation well. Northrop Grumman developed its Global Hawk, which first saw service during the war in Afghanistan, in the late 1990s. The UAS operates as a high-altitude, long-loiter ISR platform. The sensor package carried by the Global Hawk, which was developed specifically to provide ISR information on naval vessels, varies based on the block number of the aircraft. While the maritime inverse synthetic aperture radar is available on the new RQ-4 Block 40, a more accessible option could come from the RQ-4 Block 30, which holds a payload based on signals intelligence and a long-range Raytheon integrated sensor suite package.¹⁶ With that configuration, the Block 30 could observe vessels and troop movements and pick up potentially critical chatter. With many Block 30 Global Hawks remaining usable after their anticipated retirement and available at a drastically lower total cost per operational hour (about half) than the U-2,¹⁷ they may be an ideal choice for the initial mission parameters (see figure 4).

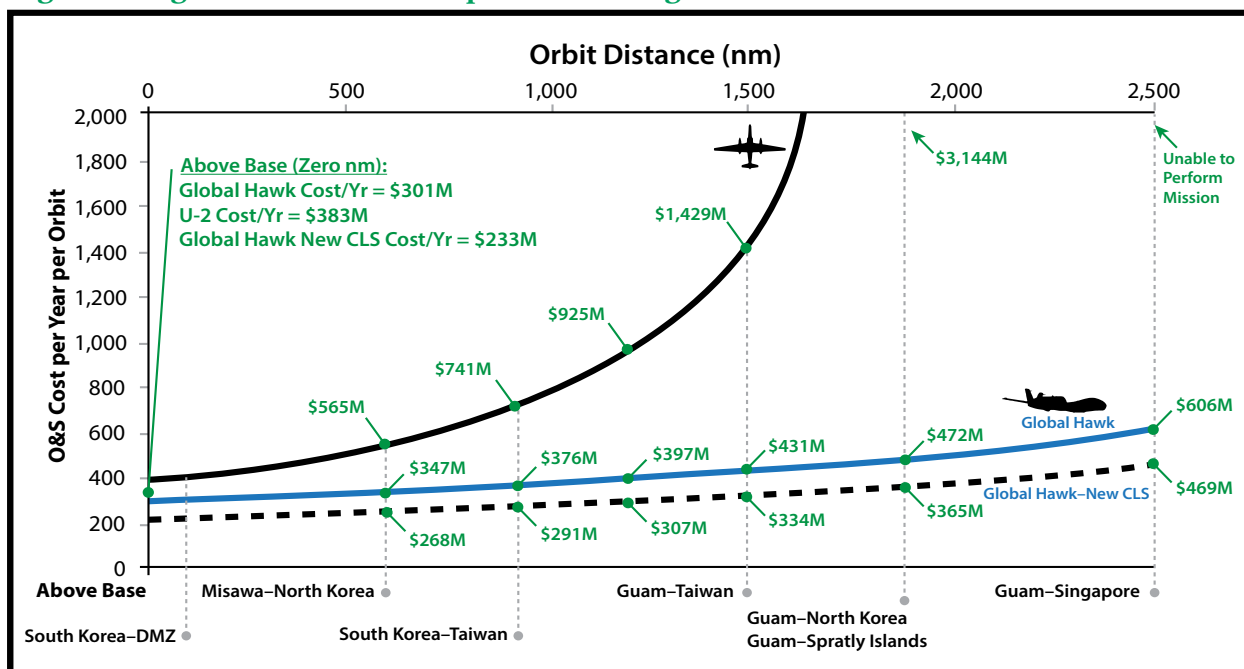
Regardless of block, the Global Hawk has a range of approximately 10,000 nautical miles (nm), operates at a service ceiling of 60,000 feet, and can loiter on a location for up to 32 hours.¹⁸ With a base located so close to the Black Sea, fuel expenditures to arrive on station should be relatively low, allowing the Global Hawk a wide operational

range and long loiter time. As shown in figure 4, the cost per flight hour of the RQ-4 continues to fall over its lifetime, costing only \$14,600 in 2014, compared to the U-2 at \$32,000. However, the Global Hawk is far from aging out, with 96 percent of the fleet life remaining. Figure 3 depicts the Global Hawk's general effectiveness through range only. Figures 4 and 5 compare the RQ-4 with the U-2. The data show the Global Hawk system's overall increases in cost effectiveness throughout its years of service. Figure 4 demonstrates the likely cost of keeping a Global Hawk in perpetual orbit over the Black Sea. From M.K. Base, the Global Hawk can reach anywhere in the Black Sea at a maximum of 539 nm, a fraction of the UAS 10,000-nm range. Even at maximum orbit distance, achieving a year-round continual orbit of any location within the Black Sea would cost \$350 million or less.

The Global Hawk exemplifies a less threatening global option; most perceive it as a system used only in permissive environments. With the pivot toward Asia and the new Air-Sea Battle doctrine, the United States should phase out nonstealthy UAS, now unsuitable for use against enemies with sophisticated antiaircraft capabilities. In the interim, by deploying the currently nonstealthy Global Hawk as a law enforcement force multiplier in the Black Sea, the UAS can continue to operate only if the environment remains permissive and can provide meaningful ISR for the duration of the mission or lifetime of the aircraft.

Another alternative is the U.S. Navy-developed MQ-4 Triton, which will enter production in 2015 and will modify the Global Hawk. The Triton has an operational ceiling of 56,500 feet and includes de-icing and weather protection systems on the basic fuselage. It also carries a more advanced sensor package than the basic Global Hawk Blocks 20–40, focused specifically on identifying ships at both its operational ceiling and at 10,000 feet.¹⁹ Built explicitly to support the U.S. Navy's Broad Area Maritime Surveillance program, the Triton maintains a loiter time of approximately 24 hours. Its specifications match exactly what would be called for in this type of mission. However, unlike the Global Hawk, the Triton has yet to deploy. Both the Global Hawk and

Figure 5. High-Altitude ISR Comparison for Single 24/7 Orbit



Source: Air Force Total Ownership Cost per flight hour (2012)

Triton systems have the advantage of being unarmed and dedicated to information-gathering, and therefore non-provocative compared to other long-range UAS options.

Some combination of both systems would be the most viable configuration for this ISR security mission. Because UAS are force multipliers, creating overlapping coverage of ISR assets would give much more flexibility to commanders on the ground and better intelligence to analysts back home. Using both systems could make this possible. The Global Hawk often carries a sensor package specifically made for high-altitude flight but cannot manage harsh weather or icing, whereas the Triton's enhanced sensors improve the ISR capabilities in the 10,000- to 56,500-foot range, giving the UAS more resolution on objects of interest. The additional benefit of Global Hawk satellite communication data link systems to provide immediate downloads provides a near-real-time bonus to intelligence collection. If these systems could operate in conjunction, with a Global Hawk spotting objects over a great distance before tasking for Triton's further identification, they would be operating at peak efficiency based on their respective strengths.

Likewise, any steps in this process of loitering ISR—whether development of flight path, assessment of objects,

tasking onto unidentified targets, or more automated functions—could be automated or manually controlled. The integration of these two systems using middleware technology is already possible, as both are built and operated on the same systems framework and middleware previously developed by Northrop Grumman. The more these ISR UAS automate, the less manpower they will require to operate, thus reducing costs outside of maintenance and fuel. As artificial intelligence systems develop more effective algorithms and become more efficient at spotting abnormal behaviors, integration between different long-loiter UAS assets could be a useful tool to any combat commander without the manpower or bandwidth requirements that come from continuous UAS operation. Regardless of long-term collaborative efforts, applying some sort of presence in the area with one system is preferable to having no presence.

Other developmental UAS might also be suitable for this mission. This could include the RQ-170 Sentinel, a leading-edge stealth system recently developed and still heavily classified. However, it seems difficult to imagine a vanguard stealth UAS system deployed for anti-smuggling ISR, at least as an unclassified operation. Another usable system for this mission could come from the Unmanned

Carrier-Launched Airborne Surveillance and Strike (UCLASS) program, a U.S. Navy project to develop a carrier-launched UAS. For the mission parameters described herein, a carrier-launched UAS could be projected from a U.S. carrier group in the Mediterranean into the Black Sea. This would negate the need for a land base but likely would harm the system's loiter time. Regardless, the UCLASS project has yet to release a winning design, and even then it could likely take several years to complete development and begin production. This underscores the viability of a Global Hawk–or Triton-based solution for the near term.

Conclusion

Strong information is crucial in a rapidly developing conflict and requires a cohesive ISR picture of the battlespace at every level of thinking—tactical, operational, and strategic—to ensure improved decisionmaking. Our suggested policy supports that ISR picture. Knowing what is moving through the Black Sea remains vital to the containment of further Russian PSYOPs, as well as to the security of U.S. allies, trading partners, and economic interests. Targeting Odessa (and the strategic Danube Delta) might also offer a means to apply more effective pressure on Russia and relieve some of our Allies' concerns. Having another layer of redundancy, which simultaneously secures Allies and inexpensively projects American power, is a smart decision. This approach also benefits from its less escalatory and less threatening capabilities, both of which should be at the forefront of our considerations.

Notes

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¹⁷ Email from Walt Kreidler, Northrop Grumman Director of International Programs, February 6, 2015.

¹⁸ Ibid.

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